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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/736,540	12/17/2003	Thierry Berlureau	Q78863	5646

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EXAMINER

BERHANU, SAMUEL

ART UNIT PAPER NUMBER

2838

DATE MAILED: 06/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

827

<b>Office Action Summary</b>	<b>Application No.</b>		<b>Applicant(s)</b>	
	10/736,540		BERLUREAU ET AL.	
	<b>Examiner</b>		<b>Art Unit</b>	
	Samuel Berhanu		2838	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 17 December 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05/12/04 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>5/12/2004</u> .   | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Claim Objections***

1. Claims 2, 5 and 6 are objected to because of the following informalities:

Claim 2: "Charging reference value to said charger" in line 2, lacks antecedence.

Claims 5 and 6: "electrical reference value" in lines 1 and 2, lacks antecedence.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 102***

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Becker et al. (US 6,271,643).

Regarding claim 1, Becker et al disclose in Figures 26-28 a device for controlling charging (26-22) of a battery comprising one or more secondary electrochemical cells (26-27), the device being interfaced between a battery charger (26-21, Column 19, lines 7-17), the battery (26-27), and at least one piece of electrical equipment (26-10,), the device being characterized in that it comprises: i) measurement means arranged to deliver measurements of a first physical magnitude representative of at

least one voltage (26-33) across the terminals of at least a portion of said battery, and of a second physical magnitude representative of at least one temperature of at least a portion of said battery (Column 19, lines 61-64); and ii) control means (26-10) arranged to determine, as a function of the measurements of said first and second magnitudes, an electrical control value enabling the battery to be maintained in a selected state of charge and at a mean temperature that is significantly below a selected threshold by using a continuous low current at constant voltage (column 19, lines 14-15), and without measuring said current (Column 19, lines 18-40).

Regarding claim 2, characterized in that said control means (26-24,26-22) are arranged to deliver said charging reference value to said charger (26-21). (Column 19 and Column 20, lines 1-12).

Regarding Claim 3, characterized in that said control means are arranged in such a manner as to deliver the electrical reference value to said charger using a protocol selected from the "PWM" protocol, the "0-10 V" protocol, and the "4 mA-20 mA" protocol (26-20, Column 9, lines 7-17).

Regarding claim 7, characterized in that said measurement means (6) are arranged to deliver to said control means (26-24) measurements of the local voltage across the terminals of at least one of the secondary electrochemical cells of said battery (26-33, Column 19, lines 54-58).

Regarding claim 8, a device characterized in that said measurement means are arranged to deliver to said control means (26-24) measurements of the local

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voltage across the terminals of each secondary electrochemical cell of said battery (26-33, Column 19, lines 54-58).

Regarding claim 9, a device according to claim 1, characterized in that said measurement means (26-32) are arranged to deliver to said control means measurements of the local temperature of at least one of the secondary electrochemical cells of said battery (Column 19, lines 54-56).

Regarding claim 11, a device characterized in that it includes a communications interface (28-10) coupled to said control means (28).

Regarding claim 12, a battery comprising at least one secondary electrochemical cell (26-27), the battery being characterized in that it is fitted with a control device (26-24, 26-22) according to any preceding claim.

Regarding claim 13, a battery characterized in that said secondary electrochemical cells (28-2) are selected from a group comprising at least: nickel/metal-hydride (Ni/MH), nickel/cadmium (Ni/Cd), lithium/ion (Li/Ion), and lead-acid (Pb/PbO<sub>2</sub>) storage cells (Column 22, lines 54-61).

Regarding claim 14, the device being used in a field selected from the group comprising: electrically- powered vehicles, aviation, rail transport, ground stations, handheld power tools, and telephony (Figure 1, Column 2, lines 12-24).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 4, 5, 6 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Becker et al. (US 6,271,643) in view of Cooper et al. (US 4,667,143)

Regarding Claim 4, Becker et al disclose the claimed invention, except a current limiter means (20) fed with current by said charger and arranged in such a manner as to feed said battery as a function of said electrical reference value as delivered by said control means. However, Cooper et al disclose a current limiter means (20) fed with current by said charger and arranged in such a manner as to feed said battery as a function of said electrical reference value as delivered by said control means (Column 4, lines 60-68, Column 5, lines 1-9). It would have been obvious to a person having ordinary skill in the art at the time of the invention to add a current limiter means as taught by Cooper et al. in the Becker et al charging circuit in order to prevent degradation of the battery due to rapid recharging or excessive overcharging.

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Regarding claims 5, Cooper et. al disclose an electrical reference value is representative of a current (column 2, lines 34-41).

Regarding claim 6, Cooper et. al disclose an electrical reference value is representative of a voltage (column 2, lines 34-41).

Regarding claim 10, Becker et al do not disclose the low charging current lies in the range about  $I_c/100$  to  $I_c/5000$ , and in particular in the range  $I_c/500$  to  $I_c/2000$ . However, it has been held that discovering an optimum range is routine in the art. (In re Aller, 105 USPQ 233). Accordingly, it would have been obvious to a person having ordinary skill in the art at the time of the invention to choose an appropriate low charging current range in Becker's device based upon the batteries parameters so as to ensure a full charge without overcharging the battery.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Samuel Berhanu whose telephone number is 571-272-8430. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Sherry can be reached on 571-272-2084. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SB

  
5/31/05

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